a stump, fold or wrinkle," it is, however, used quite generally by the older writers to indicate that portion of the fourth vein above mentioned.

Apical cell, the first posterior cell, i. e., that cell which is bounded by the third vein, the anterior cross vein, the fourth vein and the outer margin of the wing.

Costal spine, a stout bristle present in some families of flies, on the costa, near the end of the auxiliary vein.

Middle, anterior or small, cross vein; it should be remembered that this vein always connects the third and fourth longitudinal veins and bounds the inner end of the first posterior cell.

Spurious vein, a fold running from the base of the axillary excision toward the hind margin of the wing. There is in the Syrphidae also a spurious vein running from the base of the wing in a more or less longitudinal direction through the first basal and first posterior cells and lying across the anterior cross vein.

## Pemphigus venafuscus n. sp.\*

By Edith M. Patch.

(Plate XVII)

On October 1, 1909, large numbers of a dark winged flocculent *Pemphigus* were observed by the writer to be settling upon the trunks of lilac bushes (*Philadelphus syringa vulgaris*) about half a mile from the University of Maine Campus. They sought the rough places in the bark and deposited the minute sex forms characteristic of this genus. A *Syringa* aphid seemed so remarkable an occurrence that the lilacs on the campus were examined and were found to be similarly sought by the same unknown species. This shrub was not, to all appearances, a haphazard choice on the part of the aphid, for maples, oaks, and numerous other trees close at hand were avoided.

It was a good flying season for aphids and a careful watch \*Papers from the Maine Agricultural Experiment Station: Entomology, 34.

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was kept for about fifteen days during which time this *Pemphigus* was particularly numerous upon the wing. It was found to be seeking the bark of elm (*Ulmus americana*) and red ash (*Fraxinus pennsylvanica* Marsh). On the red ash they were seeking also the ash clusters of a gall mite where they deposited the true sexes as they did in the rough bark. (*Eriophyes fraxiniphila*, Hodgkiss, Me. Agr. Exp. Sta., Bul. 162, p. 367).

In all these situations on the bark of lilac, elm, and ash, and in ash clusters, the minute apterous males and females molted, mated, and the winter eggs were subsequently laid.

On May 13, 1909, the newly hatched aphids were observed to be crawling up the trunks of the lilac, and by May 20 they were found to be numerous on both the lilacs and ash where they had settled in the angles of the twigs or about the swelling buds. They were feeding, growing and excreting honeydew normally on both these hosts. Fine long bluish-white flocculent strands are secreted from six rows of abdominal glands giving the aphids a very downy appearance.

This is the first time in my observations of Pemphigus when I have found the same species chosing widely different hosts for the same stage. Whether the stem mothers of *Pemphigus* venafuscus are also able to develop upon the elm it has not yet been possible to ascertain.

The fall migrants of 1908 were on the wing for more than a month but the host plant which they had left was not located.

Reference to my *Pemphigus* records and mounted slides of 1906, however, showed specimens and notes of apterous viviparous, winged viviparous, pupae, and young of the same species which were found upon the twigs of ash June 21-29, 1906, at Orono. They did not occur on the leaves.

By reference to the Maine Station collection and through the kindness of other collectors of this genus I was enabled to compare specimens of this new *Pemphigus* with authentic specimens of thirteen named species of Pemphigus as well as several undescribed species. This comparison emphasized the

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fact that *venafuscus* is a very distinctive species. The wings alone would serve to characterize it. Their dark, smoky condition is similar to that commonly found in *Lachnus*, but unusual for *Pemphigus*, and the venation is heavier than any known *Pemphigus*.

## Pemphigus venafuscus n. sp.

Apterous viviparous.—Large dark brownish globular forms. Mottled in appearance due to six powdery discs on each abdominal segment, two nearly mid dorsal and a lateral line of two on each side. At time of collection these old forms were pulverulent rather than flocculent over the general body surface but they possessed a flocculent caudal tuft.

Length of antennae, 1.01mm. with segments as follows: 1, .06 mm.; II, .15 mm.; III, .23 mm.; IV, .19 mm.; V, .18 mm.; VI, .2 mm. Total length of body exclusive of antennae, 3.5 mm.

Found in sticky, wooly colonies along twigs of ash chiefly on new growth but somewhat on old. Collected at Orono, June 21, 1906, together with minute progeny and pupae nearly ready for the last molt.

Winged viviparous. Pupae collected June 21 on ash twigs were saved in order to obtain the mature alate forms. The pupae were exceedingly flocculent over the whole surface of the abdomen. By June 29 they had molted and begun to produce.

Head, antennae, thorax and legs black. Abdomen greenish black and flocculent. Antennae and wings as in the fall migrants.

Body length, 3 mm. Beak extending over the first third of the abdomen.

Fall migrants. These winged sexuparae (form producing the true sexes) were taken on the wing and collected from the trunks of lilac. red ash and elm in October, 1908. At time of collection they resembled the other winged viviparous generation except that they were bluish black rather than greenish black and the abdomens of the migrant sexuparae are shrunken in appearance and not plump like the other viviparous forms.

Head, prothorax, and thorax and legs black, flocculent. Antennae black, 1.55 mm. in length with segments as follows: I, .I mm.; II, .15 mm.; III, .55 mm.; IV, .25mm.; V, .275 mm.; VI, .225 mm. Straight transverse sensoria occur regularly spaced, varying slightly in number but averaging 19 on III, 10 on IV, 11 on V, 4 or 5 on VI., Asensorium, circular in shape, is distinct on distal 11. The usual terminal sensoria on V and VI. Near the base of III there is an irregular jut, the ENTOMOLOGICAL NEWS.

rest of the segment is fairly even in outline. Wings smoky and dark with dark veins. Wing expanse 9 mm. Wings at rest usually deflexed but more often reposed than in most species.

In general, a blue-black species with blue-white flocculency. The wavy filaments are as long as the body and curl out from the side of the abdomen under the margin of the wings. The wax filaments are silky in appearance and are slightly fluted on some of the specimens. This condition of the filaments is true, of course, only for those individuals which have not become too much travel worn.

Oviparous female. An apterous non-rostrated form, yellow, with semi-transparent smoky white legs and antennae. Body length, 1.15 mm. Antenna, .28 mm. Five distince segments. Terminal sensoria on IV and V. Eyes a group of 3 pigmented areas.

*Male.* Apterous and non-rostrated. Body greenish with semi-transparent smoky white legs and antennae. Body length, .75 mm. Antenna, 2.75 mm. Five distinct segments. Terminal sensoria on IV and V. Eyes a group of 3 pigmented areas.

Both the male and the female molt once before copulation. A single egg is deposited, yellow and glistening with a downy white secretion. The egg subsequently turns glistening black.

## EXPLANATION OF PLATE XVII.

Fig. 1. Oviparous female. On lilac, October, 1908. Actual length of body 1.15 mm.

Fig. 2. Male. On lilac, October, 1908. Actual length of body .74 mm.

Fig. 3. Pupa. On ash, June, 1906. Actual length of body 2.66 mm. Fig. 4. Stem mother. Very young nymph. Collected from lilac, May, 1000. Actual length of body, exclusive of beak, 1.1 mm.

Fig. 5. Top of head and antenna of apterous viviparous form,—full grown stem mother. Actual length of antenna 1.01 mm.

Fig 6. Top of head and antenna of alate viviparous form, fall migrant. Actual length of antenna 1.55 mm.

Fig. 7. Wings of fall migrant.

Thecla blenina Here. (size Edw.).—This beautiful little species has been recorded from Colorado, on the authority of Bruce, but little seems to be known of its occurrence here. It is therefore worth while to report that Mr. Nash took it in Fueblo County many years ago; and I have before me a specimen caught by Mr. S. A. Rohwer at Rifle, July 3, 1908.—T. D. A. COCKERELL.